

**REMARKS**

I. Status Summary

Claims 1, 7, 8, 12 and 13 are pending in the subject application. Claims 7, 8 and 12 have been withdrawn pursuant to a Restriction/Election Requirement issued by the U.S. Patent and Trademark Office (hereinafter "the Patent Office"). Claims 1 and 13 presently stand rejected.

Claims 1 and 13 presently stand rejected under the provisions of 35 U.S.C. § 102(b) upon the contention that the claims are anticipated by UniProt Accession No. Q9H4I2.

Claims 1 and 13 have been rejected under 35 U.S.C. §103(a) upon the contention that the claims are unpatentable over PCT International Patent Application Publication No. WO 01/57190 to Tang et al. (hereinafter referred to as "Tang et al.") in view of GenBank Accession No. BAA23691.2.

Claims 1 and 13 have been amended. Support for the amendments can be found throughout the specification as originally filed, and in particular at page 2, lines 23-32; page 17, lines 15-19; and page 17, line 31, through page 18, line 23. No new matter has been added.

New claim 14 has been added. Support for new claim 14 can be found throughout the specification as originally filed, and in particular at page 2, lines 23-32; page 17, lines 15-19; page 17, line 31, through page 18, line 23; and page 22, line 26, through page 23, line 8. No new matter has been added.

Reconsideration of the application based on the amendments and arguments set forth herein is respectfully requested.

II. Interview Summary

Applicants conducted a Telephonic Interview with Examiner Jennifer Dunston on May 14, 2010. Participating in the Telephonic Interview with Examiner Dunston were applicants' attorney of record, Arles A. Taylor, Jr., and patent agent Leon R.

Legleiter. Applicants sincerely appreciate Examiner Dunston's time and consideration in agreeing to and participating in the Telephonic Interview.

During the Telephonic Interview, the outstanding rejections of claims 1 and 13 under 35 U.S.C. § 102(b) over UniProt Accession No. Q9H4I2, and under 35 U.S.C. § 103(a) over Tang et al. in view of GenBank Accession No. BAA23691.2, were discussed. Applicants also discussed proposed claim amendments to obviate the 35 U.S.C. § 102(b) and § 103(a) rejections. Examiner Dunston indicated that she appreciated the distinctions between the proposed amended claims and the cited art. Applicants respectfully submit that the Amendments and Remarks presented herein are believed to be consistent with their understanding of Examiner Dunston's position as presented during the Telephonic Interview.

III. Response to the 35 U.S.C. § 102(b) Rejection of Claims 1 and 13

Claims 1 and 13 presently stand rejected under the provisions of 35 U.S.C. § 102(b) upon the contention that the claims are anticipated by UniProt Accession No. Q9H4I2. The Patent Office contends that UniProt Accession No. Q9H4I2 disclosed the sequence of SEQ ID NO: 1 and was publicly available in June 2002. The Patent Office contends that since the protein taught by UniProt Accession No. Q9H4I2 is allegedly identical to the protein of SEQ ID NO: 1 it would necessarily have the same function as instant SEQ ID NO: 1. Thus, the Patent Office asserts that UniProt Accession No. Q9H4I2 teaches each and every element of the rejected claims such that the claims are anticipated.

After careful consideration of the rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Without acquiescing to the contentions of the Patent Office and in an effort to advance prosecution, applicants respectfully submit that claims 1 and 13 have been amended to more clearly recite the claimed subject matter. In particular, applicants

respectfully submit that claims 1 and 13 have been amended to recite, *inter alia*, a drug agent to repress transcription of a gene expressed specifically in hepatoma cells, the drug agent comprising a dimer of ZHX3 and ZHX1 as an effective component. Support for the amendments can be found throughout the specification as originally filed, and in particular at page 2, lines 23-32; page 17, lines 15-19; and page 17, line 31, through page 18, line 23. No new matter has been added.

Applicants respectfully submit that UniProt Accession No. Q9H4I2 is not believed to disclose or teach a drug agent to repress transcription of a gene expressed specifically in hepatoma cells, the drug agent comprising a dimer of ZHX3 and ZHX1 as an effective component, wherein ZHX3 comprises amino acids 1-107 and 242-555 of SEQ ID NO: 1 and has at least 85% sequence identity to SEQ ID NO: 1, wherein the gene is a type II hexokinase or a pyruvate kinase M gene, as presently recited in claim 1. Likewise, applicants respectfully submit that UniProt Accession No. Q9H4I2 is not believed to disclose or teach a drug agent to repress transcription of a gene expressed specifically in hepatoma cells, the drug agent comprising a dimer of ZHX3 and ZHX1 as an effective component, wherein ZHX3 consists of the amino acid sequence SEQ ID NO: 1, wherein the gene is a type II hexokinase or a pyruvate kinase M gene, as presently recited in claim 13.

Accordingly, applicants respectfully submit that UniProt Accession No. Q9H4I2 does not support a rejection of present claims 1 and 13 under 35 U.S.C. § 102(b). Thus, withdrawal of the instant rejection of claims 1 and 13 under 35 U.S.C. § 102(b) is respectfully requested. A Notice of Allowance is also respectfully requested.

IV. Response to the 35 U.S.C. § 103(a) Rejection of Claims 1 and 13

Claims 1 and 13 have been rejected under 35 U.S.C. §103(a) upon the contention that the claims are unpatentable over Tang et al. in view of GenBank Accession No. BAA23691.2. Particularly, the Patent Office asserts that Tang et al. teaches an amino acid sequence (SEQ ID NO: 1479) that is 99.9% identical to the

amino acid sequence of SEQ ID NO: 1. The Patent Office contends that it would have been within the skill of one of ordinary skill in the art to make a single amino acid substitution in the sequence of Tang et al. based upon a sequence comparison with the homologous peptide disclosed in GenBank Accession No. BAA23691.2 to arrive at the presently claimed subject matter.

After careful consideration of the rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Initially, without acquiescing to the contentions of the Patent Office and in an effort to advance prosecution, applicants respectfully submit that claims 1 and 13 have been amended, as noted hereinabove, to more clearly recite the claimed subject matter.

Applicants respectfully submit that Tang et al., alone or in view of GenBank Accession No. BAA23691.2, is not believed to teach or suggest a drug agent to repress transcription of a gene expressed specifically in hepatoma cells, the drug agent comprising a dimer of ZHX3 and ZHX1 as an effective component, wherein ZHX3 comprises amino acids 1-107 and 242-555 of SEQ ID NO: 1 and has at least 85% sequence identity to SEQ ID NO: 1, wherein the gene is a type II hexokinase or a pyruvate kinase M gene, as presently recited in claim 1. Likewise, applicants respectfully submit that the proposed combination of Tang et al. and GenBank Accession No. BAA23691.2 is not believed to teach or suggest a drug agent to repress transcription of a gene expressed specifically in hepatoma cells, the drug agent comprising a dimer of ZHX3 and ZHX1 as an effective component, wherein ZHX3 consists of an amino acid sequence SEQ ID NO: 1, wherein the gene is a type II hexokinase or a pyruvate kinase M gene, as presently recited in claim 13. Accordingly, applicants respectfully submit that present claims 1 and 13 are believed to be patentable over Tang et al. in view of GenBank Accession No. BAA23691.2.

Moreover, applicants respectfully submit that one of ordinary skill in the art, based upon a review of the currently cited art, would not have expected ZHX3 and ZHX1 to form a heterodimer as an effective component as presently claimed. The proposed combination of Tang et al. and GenBank Accession No. BAA23691.2 is not believed to teach or suggest heterodimerization of ZHX3 and ZHX1. As such, one of ordinary skill in the art would not have considered the presently disclosed and claimed subject matter to be obvious over the proposed combination of Tang et al. and GenBank Accession No. BAA23691.2.

Thus, applicants respectfully request that the instant rejection of claims 1 and 13 under 35 U.S.C. §103(a) upon the contention that the claims are unpatentable over Tang et al. in view of GenBank Accession No. BAA23691.2 be withdrawn. A Notice of Allowance is also respectfully requested.

DISCUSSION OF NEW CLAIM

New claim 14 has been added. Support for new claim 14 can be found throughout the specification as originally filed, and in particular at page 2, lines 23-32; page 17, lines 15-19; page 17, line 31, through page 18, line 23; and page 22, line 26, through page 23, line 8. No new matter has been added.

Applicants respectfully submit that new claim 14 is believed to be patentable over the references cited by the Patent Office at least for the reasons set forth herein above. Applicants further respectfully submit that new claim 14 is believed to be allowable over the cited art of record. None of the cited art, either alone or in combination, is believed to teach or suggest each and every element of new claim 14. Accordingly, allowance of these claims is respectfully requested.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

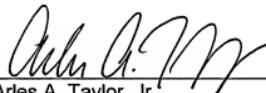
DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any additional fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR, & HUNT, P.A.

Date: 06/16/2010

By:   
Arles A. Taylor, Jr.  
Registration No. 39,395  
Customer No. 25297  
(919) 493-8000

1680/7      AAT/LRL/dbp